

Figure 1A

Sequence comparison in the region of the ligand binding domain of nicotinic acetylcholine receptor  $\alpha$  subunits

Accession Numbers of  $\alpha$  subunits used:

```
>gi 871037 : a4_chick
>gi|213218 : a1_Torpedo
>S77094 : a1_Human
>P17644 : a2_Drosophila
>CAA75688 : a3_Drosophila
>CAA04056 : a1_Heliothis
>AAD09808 : a2_Heliothis
>AAD09809 : a3_Heliothis
>CAA57477 : a2_Myzus
>AJ236786 : a3_Myzus
```

Parameters of ClustalX 1.81(Thompson et al. 1997, IGBMC, Strasbourg, France)

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-novgap \
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```

a3_Heliothis	YDDLLSNYNR	LIRPVTNVSD	ILTVRLGLKL	SQIMEVNLKN	QVMTTNLWVE
a2_Myzus	YDDLLSNYNR	LIRPVGNNSD	RLTVKMGLKL	SQIIEVNLNR	QIMTTNVWVE
a2_Drosophila	YDDLLSNYNR	LIRPVSNNTD	TVLVKLGLRL	SQIDIDNLKD	QILTTNVWLE
a1_Manduca	YDDLLSNYNK	LVRPVLNVSD	ALTVRIKLKL	SQIDIDVNLKN	QIMTTNLWVE
a1_Heliothis	YDDLLSNYNK	LVRPVLNVSD	ALTVRIKLKL	SQIDIDVNLKN	QIMTTNLWVE
a3_Drosophila	YDDLLSNYNK	LVRPVMNVTD	ALTVRIKLKL	SQIDIDVNLKN	QIMTTNLWVE
a3_Myzus	YDDLLSNYNK	LVRPVLNNTD	FLPVRIKLKL	SQIDIDVNLKN	QIMTTNLWVE
a1_Torpedo	VANLLENYNK	VIRPVEHHTH	EVDITVGLQL	IQLISVDEVN	QIVETNVRRLR
a1_Human	VAKLFKDYSS	VVRPVEDHRQ	VEVETVGLQL	IQLINVDEVN	QIVETNVRRLR

a4\_Chick LKKLFSGYNK WSRPVANISD VVLVRFGLSI AQLIDVDEKN QMMTTNVWVK

a3\_Heliothis Q..... .KWFD YKLQWNPPDY GGVEMLYVPS  
a2\_Myzus Q..... .EWND YKLKWNPPDY GGVDTHVPS  
a2\_Drosophila H..... .EWQD HKFKWDPSEY GGVTELYVPS  
a1\_Manduca Q..... .SWYD YKLSWEPREY GGVEMLHVPS  
a1\_Heliothis Q..... .SWYD YKLSWEPREY GGVEMLHVPS  
a3\_Drosophila Q..... .SWYD YKLSWEPREY GGVEMLHVPS  
a3\_Myzus Q..... .YMYD YKLTWNPPDY GGVTELVPS  
a1\_Torpedo Q..... .QWID VRLRNPPDY GGKIRLPS  
a1\_Human QGDMVDLPRP SCVTGLVPLF SHLQNEQWHD YNLKWNPPDY GGKIRLPS  
a4\_Chick Q..... .EWHH YKLWDPQEY ENVTIRIPS

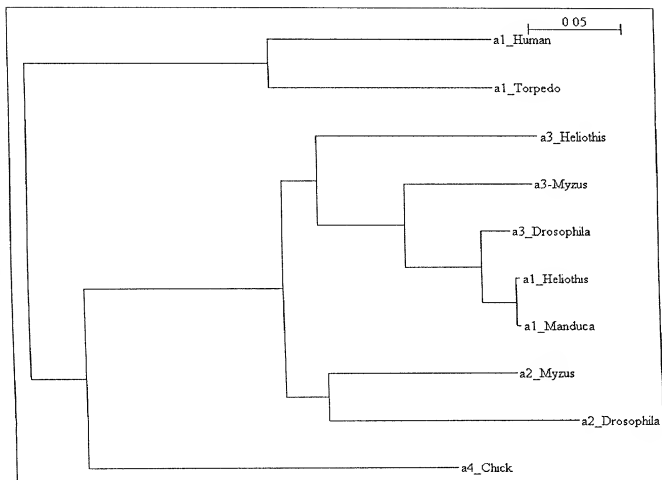
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a2\_Myzus EHIWLPDIDL YNNADGNYEV TIMTKAILHY TKGVVWKPAA IYKSFCEINV  
a2\_Drosophila EHIWLPDIDL YNNADGEYV TMTKAILHY TKGVVWTPAA IFKSSCEIDV  
a1\_Manduca DHIWRPDIDL YNNADGNFEV TLATKATLNY TGRVWRPAA IYKSSCEIDV  
a1\_Heliothis DHIWRPDIDL YNNADGNFEV TLATKATLNY TGRVWRPAA IYKSSCEIDV  
a3\_Drosophila DHIWRPDIDL YNNADGNFEV TLATKATLNY TGRVWRPAA IYKSSCEIDV  
a3\_Myzus EHVWRPDIDL YNNADGNFEV TLATKAMLY SGRVWKPAA IYKSSCEIDV  
a1\_Torpedo DDVWLPDLVL YNNADGDFAI VHMTRKLLDY TKGIMWTPAA IFKSYCEIIV  
a1\_Human EKIWRPDIDL YNNADGDFAI VKFTKVLQY TGHTWTPAA IFKSYCEIIV  
a4\_Chick ELIWRPDIDL YNNADGDFAI THLTKAHLFY DGRKWMPPAA IYKSSCEIDV

a3\_Heliothis EYFPFDEQTC FMKFGSWTYN GAQVDLKHMD QSPGSS.LVH VGIDLSEFYI  
a2\_Myzus EYFPFDEQTC SMKFGSWTYD GYMMDLRHIS QAPDS.VIE VGIDLQDYIL  
a2\_Drosophila EYFPFDEQTC FMKFGSWTYD GDQIDLKHIS QKNDKDNKVE IGIDLREYYP  
a1\_Manduca EYFPFDEQTC VMKFGSWTYD GFQVDLRHID EVRGTN.VVE LGVDLSEFYI  
a1\_Heliothis EYFPFDEQTC VMKFGSWTYD GFQVDLRHID EARGTN.VVE LGVDLSEFYI  
a3\_Drosophila EYFPFDEQTC VMKFGSWTYD GFQVDLRHID ELNGTN.VVE VGVDLSEFYI  
a3\_Myzus EYFPFDEQTC VMKFGSWTYD GFQVDLRHAN EVSGSN.VVD VGVDLSEFYI  
a1\_Torpedo THFPFDEQNC TMKLGITWYD GTKVSI SPES DR..... .PDLSTFME  
a1\_Human THFPFDEQNC SMKLGITWYD GSVVAINPES DQ..... .PDLSTFME  
a4\_Chick THFPFDEQNC KMKFGSWTYD KAKIDLVSMD SH..... .VDQLDSFWE

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a3\_Heliothis SVEWDILEVP ATRNEEYYP CPEP.FSDIT FKLTMRRKTL FYTVNLIIPC  
a2\_Myzus SVEWDIMGVP AVRHEKYYVC CEEP.YLDIF FNITLRRKTL FYTVNLIIPC  
a2\_Drosophila SVEWDILGVP AERHEKYYVC CAEP.YPDIF FNITLRRKTL FYTVNLIIPC  
a1\_Manduca SVEWDILEVP AVRNEKYYTC CDEP.YLDIT FNITMRRKTL FYTVNLIIPC  
a1\_Heliothis SVEWDILEVP AVRNEKYYTC CDEP.YLDIT FNITMRRKTL FYTVNLIIPC  
a3\_Drosophila SVEWDILEVP AVRNEKYYTC CDEP.YLDIT FNITMRRKTL FYTVNLIIPC  
a3\_Myzus SVEWDILEVP AIRNEKYYTC CEEP.YLDIT FNITMRRKTL FYTVNLIIPC  
a1\_Torpedo SGEWVMKDYR GWKHVVYTC CPDTPYLDIT YHFIMQRIPL FYFVNIIPC  
a1\_Human SGEWVIKESR GWKHVVYTC CPDTPYLDIT YHFIMQRIPL FYFVNIIPC  
a4\_Chick SGEWVIINAV GNYNSKKYEC CTEI.YPDIT YSFIIIRLPL FYTNLIIPC

**Figure 1B**

**Relationship of nicotinic acetylcholine receptor  $\alpha$  subunit sequences based on comparison of their ligand binding domains**



Tree of amino acid sequences from Fig. 1A produced from alignment of amino acid sequences from Fig. 1A by the program njplotwin95 using standard parameters.

Figure 2

2A) Receptor comprising polypeptide according to SEQ ID NO: 3 and chicken  $\alpha 2$

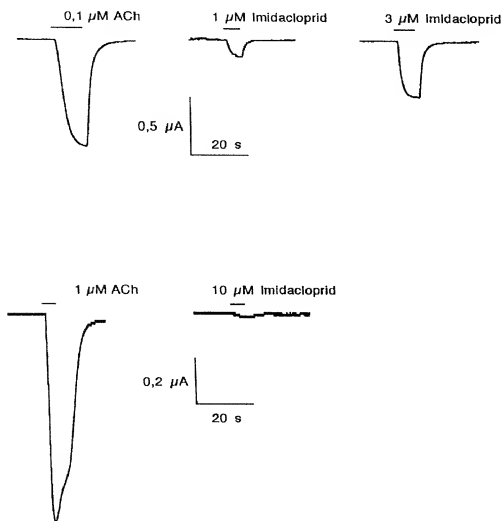
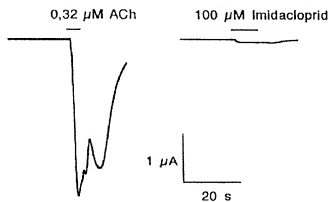
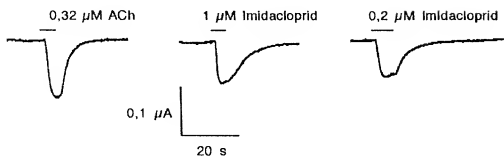


Figure 2 (cont(d))

2B) Receptor comprising chicken  $\alpha 4$  and chicken  $\alpha 2$

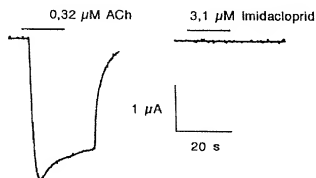


2C) Receptor comprising *Heliothis*  $\alpha 1$  and chicken  $\beta 2$



**Figure 2 (cont(d))**

2D) Receptor comprising polypeptide according to SEQ ID NO: 7 and chicken  $\beta 2$



2E) Receptor comprising polypeptide according to SEQ ID NO: 11 and chicken  $\beta 2$

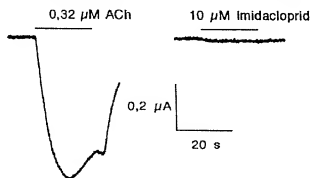
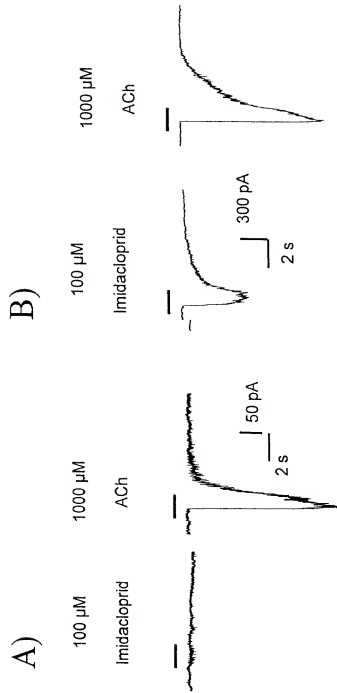


Figure 3



A: Receptor comprising chicken  $\alpha$ -4 and chicken  $\alpha$ -2 expressed in Sf-9 cells

B: Receptor comprising polypeptide according to SEQ ID NO: 3 and chicken  $\alpha$ -2 expressed in Sf-9 cells

Figure 4

